Handbook on Iron Castings SOV/5458

and modifying the cast iron; pouring, shaking out, and cleaning of castings; heat-treatment methods; and the inspection and rejection of castings. Information on foundry equipment and on the mechanization of castings production is also presented. The authors thank Professor P. P. Berg, Doctor of Technical Sciences, and staff members of the Mosstankolit Plant, headed by the chief metallurgist G. I. Kletskin, Candidate of Technical Sciences, for their assistance. References follow each chapter. There are 287 references, mostly Soviet.

TABLE OF CONTENTS:

Card ~~2/11~~

SOV/5458

Handbook on Iron Castings

Card 10/11

S/123/61/000/014/002/045
A004/A101

AUTHORS: Palatnik, L. S.; Lyubarskiy, I. M.; Lyubchenko, A. P.

TITLE: Some problems concerning the physics of metal wear

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 14, 1961, 13, abstract 14A91 ("Tr. 3-y Vses. konferentsii po treniyu i iznosu v mashinakh. v. 1", Moscow, AN SSSR, 1960, 46-53)

TEXT: The authors investigated the criteria of metal interaction during dry friction, the metal substructure and its changes during the friction process. In their conclusions they point out that the resistance to wear of a friction couple of metals is determined by a combination of the structure and a number of properties: high compression, bending and shear resistance, a combination of high hardness and ductility, stability of mechanical properties at high temperatures and pressures, high heat conductivity and corrosion resistance.

N. Sazonova

[Abstracter's note: Complete translation]

Card 1/1

S/123/61/000/023/009/018
A052/A101

AUTHORS: Bakakin, G. N., Gerasimenko, K. S., Doshchechkin, V. I., Lyubarskiy, I. M., Lyubchenko, A. P.

TITLE: The selection of the optimum heat treatment conditions of case hardened 18 XHBA (18KhNVA) steel

PERIODICAL: Referativnyy zhurnal Mashinostroyeniye, no. 23, 1961, 63, abstract 23B449 (V sb. "Radioakt. izotopy i yadern. izlucheniya v nar. kh-ve SSSR, v. 3", Moscow, Gostoptekhizdat, 1961, 90-92)

TEXT: The structure and physico-mechanical properties of the case-hardened layer of 18KhNVA, 20X2H4A (20Kh2N4A) and other steels were investigated from the viepoint of the chemical heat treatment. The heat treatment conditions differ by the speed of cooling after case hardening. The speed of cooling after case hardening affects the phase composition, the substructure of phases and their saturation with alloying components, which in its turn affects the wear resistance of the case hardened layer. Compared with the conditions adopted at the plant, the recommended conditions (for large machine elements - case hardening with with additional oil hardening at 810°C; for small parts - case hardening with

Card 1/2

The selection of the optimum ...

subsequent oil hardening, tempering at 650°C or case hardening with subsequent water hardening, tempering at 150°C) increase considerably the wear resistance of the case hardened steel layer.

N. Il'ina

[Abstracter's note: Complete translation]

Card 2/2

BUSHE, N.A.; LYUBARSKIY, I.M.; VOSKOBOYNIKOV, D.B.; GOL'DSHTEYN, L.Ya.

"Swelling" of lead babbitt. Issl. splav. tsvet. met. no.3: 195-203 '62. (MIRA 15:8)
(Babbitt metal--Metallography) (Gases in metals)

S/137/62/000/005/083/150
A006/A101

AUTHORS: Lyubarskiy, I. M., Voskoboynikov, D. B., Gol'dshteyn, L. Ya.

TITLE: Changes in the fine structure and hardness of low-carbon rimming steel depending on the heat treatment conditions and the duration of mechanical aging

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 5, 1962, 23, abstract 5I132 ("Tr. Donetsk. politekhn. in-ta",1961, 56, 151-158)

TEXT: Changes in the fine structure were studied by the X-ray method and by measuring the hardness of low-carbon grade 2кп (2kp) and 3кп (3kp) steel during mechanical aging; the steel had previously been subjected to various kinds of heat treatment. The investigation was carried out on specimens of 10 x 10 x 10 mm size, cut out of specimens for toughness tests. The impact specimens were subjected to a certain type of heat treatment (8 variants), tensile deformation by 10%, and aging at 250°C for 1 or 50 (70) hours. Radiographs were taken by the method of reverse exposure on a plane container in a КРОС-1 (KROS-1) camera, in emission of Co-anode of an X-ray, type БСВЛ (BSVL), tube. The width of line (310) K_{α} was investigated. Radiographs taken by the

Deb

Card 1/2

S/137/62/000/005/083/150
A006/A101

Changes in the fine structure and hardness ...

Debye method, at angles of 35 and 90°, are also presented. It was established that during deformation, the width of line (310) K_{α} increases sharply for all investigated types of preliminary heat treatment. Maximum relative increase in the line width takes place in high-tempered steel, least increase in quenched steel. During the aging process changes occur in the fine steel structure, caused by high-temperature tempering phenomena and mechanical aging proper. It is pointed out that the kinetics and nature of fine-structural changes in steel during mechanical aging depend substantially on the type of preliminary heat treatment; quenched steel is the most resistant to aging. The method of cooling after tempering does not affect the nature of changes in the fine structure of the steel during mechanical aging. Increased duration of mechanical aging over one hour is accompanied by some reduction of hardness in such specimens which showed higher hardness values after heat treatment. There are 5 references.

Z. F.

[Abstracter's note: Complete translation]

Card 2/2

TUNIK, A.A.; BEGUN, B.Ye.; DOBRYNINA, L.D.; SHCHERBINA, V.P.; LYUBARSKIY, I.M.

Kinetics of the crystallization and cooling of a large crankshaft casting. Lit. proizv. no.6:40-41 Je '62. (MIRA 15:6)
(Iron founding) (Cranks and crankshafts)

S/806/62/000/003/017/018

AUTHORS: Bushe, N. A., Lyubarskiy, I. M., Voskoboynikov, D. B., Gol'dshteyn, L. Ya.

TITLE: "Bulging" of lead babbitt.

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Issledovaniye splavov tsvetnykh metallov. no.3. 1962, 194-203.

TEXT: The paper describes a recently discovered problem peculiar to the low-tin (appx. 2% Sn) babbitt БК2 (BK2), not observed on any high-tin babbitt, namely, the "bulging" of the babbitt layers in separate points of a bearing. The investigation was conducted by the All-Union Scientific Research Institute of Railroad Transportation and the Diesel-Locomotive Factory imeni Malyshev. Most frequently the babbitt layer exhibits large bulges, up to 20-mm diam, with separation of the babbitt layer from the backing. Fissures visible to the naked eye appear on the surface of the bulges. Some bearing inserts exhibit small pimples of up to 2 mm diam, which are not accompanied by insert / backing separation or the appearance of surface fissures. The bulging was observed on inserts stored in both dry and moist conditions, with a protective lubricant layer and without any lubricant. While the bulges may appear anywhere, the large bulges form preferably on the

Card 1/3

"Bulging" of lead babbitt.

darker oxidized portions of the insert surface. Bulges have not been manifest in inserts installed on operating engines, neither has any great incidence of insert failures by fissuration or crumbling of the babbitt layer been reported. Statistical analysis shows that bulging correlates with an increase of ingot babbitt and decrease of scrap babbitt in the smelting charge, also with the change from air cooling to water cooling, which is intended to produce a finer-grain structure. In fact, the composition of BK2 underwent a sharp change in 1957, and is no longer the alloy originally tested in 1949-51. The Ca content has thus changed from 0.06-0.16% to 0.30, the Na from 0.15-0.31 to 0.45%; concurrently the H_B has changed from 15-20 to 25-32. It was found experimentally (near-full-page table) that all inserts suffering from large or small bulges had an excessive amount of Na, namely, in excess of the saturation amount at room T (0.4%). All nondefective stored specimens had Na contents less than 0.4%. The Ca content was not critical. The Mg content in all specimens was below standard (0.04-0.09%). The microstructure of all bulged inserts was the fine-crystalline structure of a rapidly-cooled babbitt.

Conclusions: The low-Na alloy used prior to 1957 aged less intensely, the high-Na alloy produced since 1957 ages more intensely, with segregation of a Ca-rich secondary phase (Pb_3Ca, Pb_3Na, and $PbMg_2$) in a finely-dispersed state.

Microstructural analysis on aged and over-aged specimens (detail explanation and

photos shown) revealed sizable distortions along the babbitt-grain boundaries in the presence of a large amount of Na. The dissolved gases trapped in water-cooled cast specimens diffuse along the boundaries and add to the residual stresses, until bulging occurs. The increased oxidation of bulging inserts is an indication that corrosion processes are at work also. All other conditions being equal, bulging occurs preferably in inserts that exhibit casting defects (cavities, etc.) and inadequate insert-to-backing adhesion. Specifications have been established for: (1) Content: 0.06-0.20% Ca, 0.15-0.30% Na, 0.03-0.09 Mg, 1.5-2.5% Sn, the remainder Pb; (2) hardness: H_V 23 after 72 hrs following casting; (3) gas content: Measures have been taken (unspecified) to reduce the freezing rate of the babbitt and reduce the amount of dissolved gases. There are 5 figures, 2 tables, and 7 Russian-language Soviet references.

ASSOCIATION: None given.

L 15564-63 EWT(m)/EWP(q)/BDS AFFTC/ASD Pad JD/HW/JXT(IJP)

ACCESSION NR: AP3002847 S/0126/63/015/006/0890/0894

AUTHORS: Lyubarskiy, I. M.; Gol'dshteyn, M. Ye.

TITLE: Study of phosphor nickel wear-resisting coatings

SOURCE: Fizika metallov i metallovedeniye, v. 15, no. 6, 1963, 890-894

TOPIC TAGS: P-Ni alloy, wear resistance, friction coefficient

ABSTRACT: The structure and physical properties of the P-Ni coatings with respect to their phosphorus content have been studied. Hard phosphor nickel alloys were precipitated electrolytically on different metals, and the coating toughness and the friction coefficient were evaluated. The results showed that an increase in P content increases hardness. At the P content of 1.2-1.5% the hardness reached the value of 57.? Rockwell units and remained constant during a further increase in P. One hour's heating at 300-400C increased the sample hardness by approximately 10 Rockwell units. The heating of cast iron and steel specimens covered by P-Ni alloy (low in P) to a temperature of 350C decreased considerably the friction coefficient of the coating, making it less than that of chromium. The magnitude of the coefficient did not change with load variation. The wear resistance of chromium and P-Ni coatings on cast iron and hardened steel is about the same. The electrodeposition of P-Ni with 4.5% of P resulted in a crystalline coating with the structure of

Card 1/2

L 15564-63

ACCESSION NR: AP3002847

an oversaturated solid solution on a Ni base; the same deposition with 4.5 to 14.6% of P resulted in an oversaturated "amorphous" solution. The authors conclude that the increase in hardness, the decrease in friction coefficient, and a better resistance to wear (observed after thermal treatments) are determined by the aging of P-Ni alloys. "We express our gratitude to L. S. Palatnik for valuable advice and assistance in the investigation." Orig. art. has: 2 figures.

ASSOCIATION: Zavod transportnogo mashinostroyeniya im. V. A. Maly*shova, Khar'kov (Vehicle Plant)

SUBMITTED: 25Aug63 DATE ACQ: 23Jul63 ENCL: 00

SUB CODE: ML NO REF SOV: 004 OTHER: 003

Card 2/2

LYUBARSKIY, I.M.; TUROVSKIY, M.L.

Using a method of cut out craters for the measurement of the local wear of rolls Zav.lab. 29 no.8:986-988 '63. (MIRA 16:9)

1. Zavod transportnogo mashinostroyeniya imeni V.A.Malysheva.
(Roller bearings—Testing)

LYUBARSKIY, I.M.; VOSKOBOYNIKOV, D.B.; GOL'DSHTEYN, L.Ya

Continuous X-ray investigation of the friction process. Tren. i izn. v mash. no.19:79-86 '64. (MIRA 18:3)

BAKAKIN, G.N., inzh.; LYUBARSKIY, I.M., kand. tekhn. nauk; LYUBCHENKO, A.P., kand. tekhn. nauk; MOZHAROV, M.V., inzh.; TUNIK, A.A., inzh.

Comparative laboratory wearing tests of cast irons with globular and flaky graphite. Vest. mashinostr. 44 no.6:62-64 Je '64. (MIRA 17:8)

L 2573-66 EWT(m)/EWP(w)/EPF(c)/T/EWP(t)/EWP(k)/EWP(b)/EWA(c) JD/HW/DJ/GS
ACCESSION NR: AT5022671 UR/0000/65/000/000/0133/0137

AUTHORS: Lyubarskiy, I. M.; Podgornaya, O. F.; Lyubchenko, A. P.; Voskoboynikov, D. B.; Turovskiy, M. L.

TITLE: The structural mechanism of wear (on the question of the fatigue nature of wear)

SOURCE: AN SSSR. Nauchnyy sovet po treniyu i smazkam. Teoriya treniya i iznosa (Theory of friction and wear). Moscow, Izd-vo Nauka, 1965, 133-137

TOPIC TAGS: friction, wear, friction wear, surface wear, surface fatigue

ABSTRACT: As an extension of his earlier formulation of the three-stage process of friction wear, I. V. Kragel'skiy has proposed a mechanism of fatigue type of wear. Based on structural and property investigations of individual microvolumes in the active friction layers, the nonuniformity of structure and material properties of separate microvolumes has been established. It can be assumed that the friction of rough surfaces is a statistical combination of simultaneous processes of brittle fracture and plastic deformation of microirregularities. The relative importance of the two processes is determined by the different effects of thermal and surface treatments and of friction on the α and γ-phases and their substructures. Under heavy friction conditions, processes of cold hardening of the γ-phase and

Card 1/2

L 2573-66

ACCESSION NR: AT5022671

3

weakening of the α-phase (separation of carbide phase, etc) occur. The most wear-resistant conditions for a homogeneous α - γ alloy are met when the γ -phase is not "cold hardened," while the α-phase is "cold hardened." The wear rate (mμ/cycle) histories of many experiments performed under gear tooth friction conditions indicate the cyclic nature of the wear rate. Microhardness histories during the experiments showed a comparatively high initial austenite hardness, which increased with time, until it and the friction torque suddenly decreased. Thus wear occurs when individual microvolumes of the surface loose their plasticity due to cold working and are worn away, exposing new surface which repeats the cycle. Orig. art. has: 4 figures.

ASSOCIATION: Nauchnyy sovet po treniyu i smazkam, AN SSSR (Scientific Committee on Friction and Lubrication, AN SSSR)

44,55

SUBMITTED: 18May65 ENCL: 00 SUB CODE: ME

NO REF SOV: 000 OTHER: 000

Card 2/2

L 21767-66 EWT(1) GW

ACC NR: AP6012614 SOURCE CODE: UR/0025/65/000/011/0139/0144

AUTHOR: Lyubarskiy, K. (Scientific secretary)

ORG: Moscow Division, All-Union Astronomical-Geodetic Society (Moskovskoye otdeleniye Vsesoyuznogo astronomo-geodezicheskogo obshchestva)

TITLE: Canals of Mars. Artificial or natural?

SOURCE: Nauka i zhizn', no. 11, 1965, 139-144

TOPIC TAGS: Mars planet, Mars flight, space TV, planetary photography, planetary environment

ABSTRACT: The author remains unconvinced that the photographs of Mariner IV have refuted the existence of canals on Mars. He cites three reasons: 1) only a very small part of the Martian surface was photographed, and that was an area virtually without large canals; 2) the canals in fact are chains of spaced spots and from a close distance it would not be possible to detect them as linear features, as has been demonstrated long ago; 3) at the time the photographs were taken it was the heart of autumn in the southern hemisphere of Mars where most of the seas and canals are concentrated; at this season it is impossible to see any phenomena resembling life or vegetation in the telescope. It is premature to draw the conclusion that there is no life on Mars, and certainly from a distance of 9,000 km none would be visible anyway. The author notes that the hundreds of photographs taken by the Tiros satellite in

Card 1/2

only one case show any signs of life on our own planet. The only argument which the opponents of life on Mars has gained from the Mariner observations is the presence of the craters, seemingly of meteoritic origin, but the author feels that even this does not preclude the existence of life in some form. The author then reviews all the arguments in favor of an artificial origin of the Martian canals. These were best summarized in a recent article by F. Zigel' (Nauka i Zhizn', No. 4, 1965). This is followed by a more complete analysis of the possibility of a natural origin of the canals. The author dismisses the possibility of validity of the volcanic, meteorite, ice and other hypotheses, but gives particular attention to the tectonic hypothesis, citing arguments to refute its opponents. This is followed by a discussion of how much water is present on Mars and whether the water present in the polar caps is accessible for vegetation. It is shown that water is in fact present and available and the canals in fact probably do exist and are of natural origin. Orig. art. has: 6 figures. [JPRS]

SUB CODE: 03, 17, 22, 14 / SUBM DATE: none

LYUBARSKIY, K.A.

Negligible effects in the determination of the luminosity function of meteors. Biul. Kom.po kom. i meteor. AN SSSR no.7:36-50 '62. (MIRA 17:11)

1. Astrofizicheskaya laboratoriya, Ashkhabad.

LYUBARSKII, K. A.

K.A. Lyubarskii, V.V. Martynenko

Duplication of meteor. phenomena with projection lamp

All Union Astronomic-Geodetic Society-Bulletin Moscow

9(16), 1950, 20-22

From: Monthly list of Russian Accessions, Aug. 1951, Vo. 4, No. 5, p. 27
(Trans. Cop.)

1. LYUBARSKIY, K. A., SNEGIREVA, R. V.

2. USSR (600)

4. Meteors

7. Photographic observations of meteors carried out in Simferopol in the summer of 1952. K. A. Lyubarskiy, R. V. Snegireva. Astron. tsir., No. 131, 1952.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

LYUBARSKIY, K.A.

LYUBARSKIY, K.A.

Statistical study of bolides (results of compilations based on the bolide catalog of the Committee on Meteorites of the Academy of Sciences of the U.S.S.R.). Meteoritika no.11:153-164 '54. (MLRA 8:3)
(Meteorites)

LYUBARSKIY, K.A.

Date of fall of the Saratov stone meteorite. Meteoritika no.11: 180-182 '54. (MLRA 8:3)
(Saratov--Meteorites)

LYUBARSKIY, K.A.

Study of meteors at the Simferopol' Meteor Station and the outlook for further development of observations. Trudy AN Tadzh. SSR 20:151 '54. (MIRA 13:3)

(Meteors)

LYUBARSKIY, K.A.

Study of circumstances in the Vengerovo shower of stone meteorites. Meteoritika no.13:920103 '55. (MLRA 9:2)
(Vengerovo--Meteorites)

LYUBARSKIY, K.A.

Two radiants of telescopic meteors. Izv.AN Turk.SSR no.2: 138 '57. (MLRA 10:5)

1. Institut fiziki i geofiziki AN Turkmenskoy SSR.
(Meteors)

ЛЮБАРСКИЙ К.А.

AUTHOR: Lyubarskiy, K.A. and Latyshev, I.N. 26-12-36/49

TITLE: The Green Light of Venus (Zelenyy luch Venery)

PERIODICAL: Priroda, 1957, # 12, p 114 (USSR)

ABSTRACT: The green light of Venus is a phenomenon which was observed only twice in the province of Ashkhabad. The author gives an account of the observations he made at the astronomical station of the Institute of Physics and Geophysics of the AN of the Turkmen SSR. Beginning with 27 June 1957, the green light could be seen until 7 July 1957. It was visible through binoculars and even with the naked eye as a bright dot shifting from sky blue to yellowish green. These observations were possible owing to exceptional atmospheric conditions in the region of Kopet-Dag.

ASSOCIATION: Institute of Physics and Geophysics of the AN of the Turkmen SSR, Ashkhabad (Institut fiziki i geofiziki Akademii nauk Turkmenskoy SSR, Ashkhabad)

AVAILABLE: Library of Congress

Card 1/1

LYUBARSKIY, K.A.

Luminosity functions of meteor streams and sporadic material. Trudy Inst.fiz.i geofiz.AN Turk.SSR 5:18-25 '58. (MIRA 13:6)
(Meteors)

69371

SOV/35-59-10-8146

Translation from: Referativnyy zhurnal. Astronomiya i Geodeziya, 1959, Nr 10, p 73 (USSR)

AUTHORS: Vladimirskiy, B.M., Lyubarskiy, K.A.

TITLE: On the Question of the Nature of the Surface of Mars

PERIODICAL: Tr. Sektora astrobotan. AS KazSSR, 1958, Vol 6, pp 34-38

ABSTRACT: The Mac Laughlin hypothesis of active volcanism on Mars (RZhAstr. 1955, Nr 4, 1562, 1553) is criticized. It is asserted that the seasonal changes on the surface of Mars (the darkening of seas and the diminution of their albedo in red rays during the spring-summer period, and lightening of seas and the increase of their albedo in red rays during the winter period) cannot be explained within Mac Laughlin's hypothesis by any chemical processes. Also, they cannot be attributed to ordinary humidification which lowers the total albedo but does not alter the spectral reflection curve. The concurrence obtained by Mac Laughlin of the main directions of the winds with the outlines of seas was produced by insufficiently reliable material (Hess's wind chart) which, moreover, was not used objectively, and as a result of which a picture was obtained, not corresponding to the atmospheric

Card 1/2

69371

On the Question of the Nature of the Surface of Mars SOV/35-59-10-8146

circulation on the planet. In spite of the fact that there is a connection between the main direction of the winds and some canals, it is exaggerated. There follows an indication of the complexity of the problem of canals, and results are given of the statistical processing of the photographic map of Mars by Trempler (1924) carried out by the author. Graphs are cited of the dependence of the number of canals on the angle with the parallels for the southern and northern hemispheres of the planet and the distribution of the number of canals over the angles with the parallels for different latitudes. The distribution of the hydrologic density of canals over the latitudes and longitudes was found to be uniform; the deviations from the mean obey Gauss' law. Bibl. 9 titles.

N.S. Orlova

4

Card 2/2

69372

SOV/35-59-10-8147

Translation from: Referativnyy zhurnal. Astronomiya i Geodeziya, 1959, Nr 10, p 73 (USSR)

AUTHORS: Vladimirskiy, B.M., Lyubarskiy, K.A.

TITLE: On the Criticism of the Hypothesis of Vegetation Existence on Mars

PERIODICAL: Tr. Sektora astrobotan. AS KazSSR, 1958, Vol 6, pp 43-54

ABSTRACT: The opinion held by Academician V.G. Fesenkov (RZhAstr, 1955, Nr 7, 2913) about the discrepancy between the observation data and the hypothesis on the existence of vegetation on Mars is being questioned. The authors consider the assertion that oxygen is absent in the planet's atmosphere to be premature. Although its upper limit, indicated by Denkham as being 5 · · 10^{-17}g, is probably overestimated by 2 - 3 orders of magnitude, it still does not indicate a total absence of this gas. The assertion that there is a discrepancy between the law of the reflection of light from the Martian seas and the hypothesis concerning plant life is wrong. The high values of the smoothness factor q obtained for the seas and continents on Mars from observations are unreliable. On Earth, under conditions similar to those on Mars, plants can be found which differ widely in their photometric

Card 1/3

On the Criticism of the Hypothesis of Vegetation Existence on Mars

properties from the usual vegetation of a temperate climate, which is brought forward by V.G. Fesenkov for comparison. The conception that seas are barren land, is also contradicted by the course of the relationship expressing the difference q continents - q seas versus the wavelength. The absence of any difference in the amount of polarization of seas and continents was produced by the insufficiency and unreliability of the observation material; there are no data for the extremely important long wavelength section of the spectrum, and also no data for terrestrial vegetation existing in conditions similar to those on Mars. In answering the objection raised in connection with the heightened thermal radiation of seas, the authors point out that the temperature of the vegetation existing under conditions similar to those on Mars, can be higher than the temperature of the surrounding soil (this is illustrated by data given for the vegetation of the cold Central Tyan'-Shan' Desert), owing to the fact that the basic fraction of energy consumed by a leaf is used up for transpiration and not for photosynthesis (only 5% is used for photosynthesis). The question is being discussed on the possibility of the photosynthetic process in the conditions of Mars, and observation data relating to the spectral properties of Martian seas are being examined. The correlation of the reflection spectra of the seas with the spectra of the absorption of plant pigments leads to the conclusion

4

69372
SOV/35-59-10-8147

On the Criticism of the Hypothesis of Vegetation Existence on Mars

that the main pigments of the Martian vegetation are carotinoids. The vegetation on Mars must take the form of flat-topped tufts of vegetation with a very small annual growth (perennial). Bibl. 56 titles.

N.S. Orlova

Card 3/3

Lyubarskiy, K.A.

3(1) p. 2 PHASE I BOOK EXPLOITATION SOV/3011

Vsesoyuznoye astronomo-geodezicheskoye obshchestvo

Byulleten', no. 25 /32/ (Bulletin of the All-Union Astronomical and Geodetic Society, Nr 25 / 32/) Moscow, Izd-vo AN SSSR, 1959. 50 p. 1.500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR.

Editorial Board: V V. Fedynskiy (Resp. Ed.), M.S. Bobrov (Deputy Resp. Ed.), M.M. Dagayev, I.T. Zotkin, A.A. Izotov, P.P. Parenago, P.I. Popov, V.A. Bronshten (Scientific Secretary)

PURPOSE: This booklet is intended for astronomers and geophysicists.

COVERAGE: This is a collection of 14 articles on various questions in astronomy. Among the problems treated are: determining the age of lunar formation by analyzing meteoritic crater distribution, atmospheric extinction in the observance of noctilucent clouds, star brilliance, solar cycles, meteor and comet studies. There is an article on the 12th Moscow Astronomical Olympiad competition for students of astronomy and geodesy. References accompany individual articles.

Card 1/4

TABLE OF CONTENTS:

Brief Reports

AVAILABLE: Library of Congress

TM/sfm
1-27-60

3(1) SOV/165-59-5-20/21

AUTHORS: Lyubarskiy, K.A., Latyshev, I.N.

TITLE: The Activity of Telescopic Meteors During the Period of MGG (IGY)

PERIODICAL: Izvestiya Akademii nauk Turkmenskoy SSR, 1959, Nr 5, pp 97-98 (USSR)

ABSTRACT: The authors describe observations of telescopic meteors carried out during the MGG (International Geophysical Year). The observations were conducted by the "Astrofizicheskaya laboratoriya Instituta fiziki i geofiziki Akademii nauk Turkmenskoy SSR (Astrophysical Laboratory of the Institute for Physics and Geophysics, AS Turkmenskaya SSR) from the observatory in Vannovskiy, where "Asembi" type binocular telescopes with a 3.03 range were used. The correction of time is given. They differ slightly from data obtained by the observatory Skal'nate Pleso [Ref 1]. There are 1 table and 1 Soviet reference.

~~Card 1/2~~

Inst. Physics & Geophysics AS Turk SSR

LYUBARSKIY, K.A.

On the Tungus meteorite of June 30, 1908. Izv.AN Turk.SSR. no.6: 128-129 '59. (MIRA 13:5)

1. Institut fiziki i geofiziki AN Turkmenskoy SSR.
(Meteorites)

S/035/61/000/001/017/019
A001/A001

3.1410

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1961, No. 1, p. 65, # 1A461

AUTHOR: Lyubarskiy, K.A.

TITLE: Distribution of Telescopic Meteors in Altitude and Their Luminosity Function (Some Methodology Problems)

PERIODICAL: "Tr. In-ta fiz. i geofiz. AN TurkmSSR", 1959, Vol. 6, pp. 161 - 169

TEXT: The author points out the importance of estimating the numbers of meteors of different stellar magnitudes at various altitudes. He proposes a graphic-analytical method of calculating the total volume being inspected by the observers during the basis observations of meteors, for any horizontal coordinates of the centers of the sight fields. The author considers the method of determining the base of the meteor luminosity function χ. Coefficients of detectability are determined by extending the Oepik method to the case of basis observations.

S.M.

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

LYUBARSKIY, K.A. (Ashkhabad)

Attempt to determine the absolute age of lunar features.
Biul.VAGO no.25:3-8 '59. (MIRA 13:3)
(Moon--Surface)

30278

S/035/61/000/010/032/034
A001/A101

3.2440 (1041)

AUTHORS: Gul'medov, Kh.D., Lyubarskiy, K.A., Latyshev, I.N.

TITLE: Relationship between altitudes of meteors and solar activity

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 10, 1961, 69, abstract 10A491 ("Izv. AN TurkmSSR, Ser. fiz.-tekhn. khim. i geol. n.", 1960, no. 6, 141)

TEXT: The authors make an attempt to discover a relation between the altitude H of meteors and solar activity (Wolf number). It was found from photographic observations at Ashkhabad that on the average:

$\omega < 100$ H_1 = 59 km + 0.82 V g km (n = 10)
$\omega > 150$ H_1 = 57 km + 0.77 V g km (n = 14).
$\omega < 100$ H_2 = 63 km + 0.44 V g km (n = 10)
$\omega > 150$ H_2 = 60 km + 0.36 V g km (n = 14)

where H_1 and H_2 are altitudes of flash and extinction respectively. It is obtained that altitudes of meteors decrease with the rise of solar activity. Processing of observations of telescopic meteors leads to the same conclusion.

[redacted]

LYUBARSKIY, K.A.

Probability of correct estimation of hourly meteor numbers. Izv. AN Turk.SSR.Ser.fiz.-tekh., khim.i geol.nauk no.1:121 '61. (MIRA 14:8)

1. Fiziko-tekhnicheskiy institut AN Turkmenskoy SSR.
(Meteors)

3.2440
3.1520

S/035/62/000/012/025/064
A001/A101

AUTHOR: Lyubarskiy, K. A.

TITLE: Spectrographic observations of meteors in Turkmenia

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 12, 1962, 70, abstract 12A517 ("Byul. Komis. po kometam i meteoram Astron. soveta AN SSSR", 1961, no. 5, 37 - 44)

TEXT: Presented is the catalogue of 15 meteoric spectra taken at the astrophysical observatory of the Physico-Engineering Institute, AS USSR, by means of a new spectral patrol operating since March 1958. The following spectra were obtained: 3 spectra of Perseids, 2 spectra of Orionids, one spectrum of Librids, and the rest - of sporadic meteors. The four best spectra (bolide 9^m, two Orionids, one of which with a bright burst, and a typical Perseid) were processed in detail. A graphical-analytical method employed for interpretation of spectra is briefly described. Identification of the lines and characteristic of the spectra are presented in a table.

S. Mayeva

[Abstracter's note: Complete translation]

Card 1/1

S/035/62/000/012/026/064
A001/A101

AUTHOR: Lyubarskiy, K. A.

TITLE: Spectrographic observations of Perseids in Simferopol' in 1959

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 12, 1962, 70, abstract 12A518 ("Byul. Komis. po kometam i meteoram Astron. soveta AN SSSR", 1961, no. 6, 40 - 44)

TEXT: Perseids were spectrographically observed at the Simferopol' meteor station in August 1959. Seven spectra were taken, five of which were processed with dispersion of 2,200 A/mm and 1,100 A/mm. All the spectra are typical Perseid spectra with intense lines H and K of Ca. Identification of lines is presented in a table. Emission bands of molecular nitrogen are noted in all spectra. There is a weak relation between nitrogen band intensity and variations in meteor brightness.

S. M.

[Abstracter's note: Complete translation]

Card 1/1

PHASE I BOOK EXPLOITATION SOV/6186

Lyubarskiy, Kronid Arkad'yevich

Ocherki po astrobiologii (Essays in Astrobiology). Moscow, Izd-vo AN SSSR, 1962. 119 p. Errata printed on the inside of back cover. 5000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Vsesoyuznoye astronomo-geodezicheskoye obshchestvo.

Resp. Ed.: N. I. Kucherov, Senior Scientific Collaborator; Ed. of Publishing House: V. A. Bronshten; Tech. Ed.: N. F. Yegorova.

PURPOSE: This book is intended for workers in astronomy and space biology. It may be read by the interested layman.

COVERAGE: The methodology of the Tikhov astrobotanical school is rejected and a new approach to studying Martian life is proposed. Tikhov's geomorphism is refuted on the ground that Martian organisms are the product of a completely different biochemical envi-

Card 1/5

ronment and differ radically from terrestrial organisms with respect to respiratory and water-supply systems. For this reason no genetic relationship can exist between terrestrial and Martian organisms, and, hence, no comparisons can validly be made on that basis. What similarities do exist are attributed solely to convergence. The future of astrobiology (the term astrobotany is rejected) lies in the detailed analysis and interpretation of the optical properties of Martian "seas" as indications of specific biochemical and physiological conditions prevailing on Mars. The work of Sinton in this field is considered particularly valuable. A short glossary of terms accompanies the text. There are 122 references: 92 Soviet, 25 English, and 5 French.

TABLE OF CONTENTS:

43288

S/831/62/000/008/009/016
E032/E514

3.1220
3.1230
3.1710

AUTHORS: Belous, A.T., Gul'medov, Kh.D., Inozemtsev, Yu.A., Lyubarskiy, K.A., Kalyakina, M.I. and Sadykov, Ya.F.

TITLE: Meteor observations at Ashkhabade

SOURCE: Ionosfernyye issledovaniya (meteory). Sbornik statey, no.8. V razdel programmy MGG (ionosfera). Mezhduved. geofiz. kom. AN SSSR. Moscow, Izd-vo AN SSSR, 1962, 64-68

TEXT: The Astrofizicheskaya laboratoriya IFG AN Turkmenskoy SSR (Astrophysics Laboratory IFG AS Turk.SSR) has carried out systematic studies of meteors during the IGY with a view to obtaining observational material under the following three main headings: 1) meteor activity as an ionizing factor in the atmosphere; 2) determination of the density and height of the homogeneous atmosphere; 3) determination of wind distribution in the upper atmosphere from observations of meteor-trail drift. The observations were carried out visually (with and without telescopes), photographically and by radar. In addition, there were spectral observations of meteors and telescopic observations

Card 1/3

of meteor trails. The results of these observations will be published later. The present paper gives a summary of the experimental methods. All the observations were carried out in accordance with the IGY programme and instructions. The visual observations without instruments were carried out by two people who observed the sky through an aperture 2 m in diameter placed at a height 2 m above the earth's surface and parallel to it. Each observer was placed horizontally along the meridian, his head pointing north and his eye located at the centre of the aperture. Altogether 5016 meteors were observed over a period of 600 hours. The telescopic visual observations were carried out with two identical binoculars separated by 0.505 km with a magnification of X12 and a field diameter of 3.3°. The limiting stellar magnitude was 10. Altogether 650 meteors were recorded in approximately 450 hours and 176 parallaxes were obtained for them. The radar observations were carried out with standard radar apparatus giving 80 kW/pulse at a repetition frequency of 50 cps and a carrier frequency of 72 Mc/sec. The mean point of the seven-element antenna was 22° above the horizon, facing west. Altogther during the 16 months of the IGY, 6216 radio

meteors were recorded (4070 hours). The photographic observations were carried out at two points separated by 20.77 km. One of the points had a set of four Xenon cameras (F = 12.5 cm, D:F = 1:2, frame size 9 x 12). The other point had four НАФА-3с/25 (NAFA-3s/25) cameras with Уран-9 (Uran-9) objectives (F = 25 cm, D:F = 1:25, frame size 18 x 24). In each case the cameras covered an area of about 7000 sq.deg around the zenith. The axes of the two sets were at 10° to each other, which corresponded to meteor heights of 80-100 km. One of the photographic stations included a rotating shutter which facilitated meteor trail measurements. Altogether 100 meteor photographs were obtained (18 parallaxes). The spectral observations were begun in May, 1958 (ordinary flint prisms, dispersion 575 Å/mm). The total number of spectra which were obtained was eight; they contained a large number of lines. Finally, the meteor trails were investigated using a Hertz 8 x 30 binocular with a 6° field of view. Twenty persistent trails were recorded during the IGY period, of which three were also recorded at the two photographic points.

Card 3/3

L 17984-63 EWT(1)/FCC(w)/BDS/EEC-2/ES(v) AFFTC/AFMDC/ESD-3/APGC
Pe-4/Po-4/Pq-4 GW
ACCESSION NR: AT3002083 S/2728/62/008/000/0125/0174

79
76

AUTHORS: Lyubarskiy, K. A.; Latyshev, L. N.

TITLE: Results of investigations of telescopic meteors in Turkmenia during the IGY and the IGC

SOURCE: AN Turkm SSR. Fiziko-tekhnicheskiy institut. Trudy, v.8, 1962, 125-174

TOPIC TAGS: meteor, telescopic meteor, meteor elevation, meteor frequency, meteor speed, meteor definition sharpness, meteor entry deceleration, telemeteor, IGY, IGC

ABSTRACT: The paper gives a report on systematic observations of telescopic meteors (telemeteors) performed by the Astrophysical Laboratory of the Fiziko-tekhnicheskiy institut (Physico-Technical Institute), AS, TurkmSSR, during the IGY and the IGC. The observations were performed in accordance with the IGY program, and, in addition, a supplementary parameter, namely, the elevation of the telemeteors, was obtained. 12x80 binoculars were employed. The limiting star magnitude of the telemeteors registered was 10-10.5 m. The Hoffmeister effect, that is, the apparent decrease in star magnitude of celestial bodies engaged in a motion at elevated angular speed is still small with a 12x magnification.

Card 1/6

ACCESSION NR: AT3002083 0

The binoculars were directed exactly at the zenith and were held fixed. The sighting was performed at the prescribed moment according to precalculated ephemerides to ensure accuracy of sighting and accordance between the visual fields of the two observers. The base observations were performed on a 505-m-long base, base azimuth 219 degrees SWNE. This base length was chosen to maximize the atmospheric volume viewed by each observer and to hold the parallax value greater than the observational errors. The base azimuth was dictated by the morphology of the local terrain and by a desire for an alignment of the base in a direction perpendicular to the predominant direction of the telemeteors (for maximum parallax). Systematic errors were minimized by having the observers alternate between the two observation posts. Each meteor was plotted on a star map from which the positional angle of the meteor (SWNE), the length of the visible path segment, and the right ascension of the point of intersection of the meteor track or its extension with the small circle delta=38 degrees were obtained. It became necessary to deviate from the system of registration proposed in the "Instructions for the observation of meteors during the IGY," because most of the parameters recommended therein are meaningless in the case of a small, closely bounded, field. The journal contains the following entries: (1) Serial number of meteor; (2) time of passage to the nearest minute; (3) brightness to the nearest 0.5; (4) color code (1 - blue, 2 - white, 3 - yellow, 4 - orange, 5 - red, and additive

binary combinations thereof); (5) sharpness of definition in a 5-grade code; (6) speed in 5 grades; (7) time of the visibility of the meteor to the nearest 1/20 sec; (8) presence of a trail; (9) 2-digit indication showing whether the beginning of the meteor appearance (first digit) and the end of its appearance (second digit) were observed inside the visual field of the binocular (plus) or not so observed (minus); (10) in meteors with trail, the magnitude of the drift or diffusion of the trail. The present series of observations, performed by the same observers, on the same instruments, in the same region of the atmosphere, and on the same base, constitutes a unique series of base observations as to homogeneity and number of observations. The elaboration of these data is described, and the results are summarized in two categories, a geophysical and an astronomical. Geophysical conclusions: I. Elevations of telemeteors. The mean elevation of telemeteors, according to antecedent literature sources, was judged to be 0.67-0.40 of that of ordinary meteors. In fact, the telemeteors appeared grouped in 4 groups with elevations of 125, 95, 49, and 16 km. The authors do not regard it possible to identify the lower telemeteors with the Whipple micrometeorites (WMM), as had been done by I. S. Astapovich and A. K. Terent'yeva, since the WMM's are non-luminous. They also disagree with the antecedent identification of the lower telemeteors with the particles picked up by sounding rockets because of the excessive difference in the masses of these two types of particles. To substantiate the

L 17984-63
ACCESSION NR: AT3002083

conclusions regarding the true elevations of the telemeteors, 195 pairs were analyzed in a parallax catalog (4 pages). The parallax-distribution curve of the telemeteors is found to be practically coincident with the Gaussian error-distribution curves. The mean elevation of the telemeteors (more accurately, the midpoint of their trajectories) is 101 km. Thus the elevation of telemeteors was found to coincide exactly with that of ordinary meteors. II. The midnight effect. An investigation of the sharp, oscillatory, changes in the diurnal cycle of the characteristics of telemeteors at or about the moment of local midnight is attributed to a rise and subsidence of the air at that time. These vertical motions, in conjunction with the resulting Coriolis accelerations arising therein, may explain the alternating westward and eastward changes in the drift of meteor trails. III. Lunar tides. The magnitude of both the lunar and the solar tidal oscillations are analyzed and are found to be extremely strong in the upper atmosphere. IV. Relationship between meteor phenomena and solar activity. While a connection between the meteor parallaxes and the solar activity is found, the observational material is judged to be inadequate to support any specific conclusions on the effect. V. Some problems of meteor ionization. Trail formation is found in meteors of all brightnesses, but only in meteors moving at high speeds. Trail-forming meteors are ill-defined (blurred outlines). A clear-cut relationship was found between the sharpness of contour definition and the speed and brightness of

Card 4/6

L 17984-63

ACCESSION NR: AT3002083 0

meteors. Bright and fast meteors are the most blurred; dark and slow meteors are the most sharply defined. VI. Deceleration of telemeteors. Deductive conclusions from meteors entering the field of view versus those passing through or exiting from the field of view show the intense braking effect undergone by meteors entering the atmosphere. VII. Trail drift. The details of these extremely difficult observations are described. VIII. Annual variation of relative and absolute elevations. Maxima in June and December, that is, at the time of the solstices, are noted, but an interpretation is found to be difficult. Astronomical conclusions: I. Luminosity functions. Issuing from the observations of the star magnitude observed, an attempt is made to determine the mass distribution. The authors concur in earlier conclusions that the luminosity function of fast meteors is steep, that is, that it suggests the existence of two types of sporadic material in telescopic meteors also. II. Speed and direction of telescopic meteors. Two ill-defined maxima are found: 300-350 min/sec and 450-500 min/sec. The position relative to the apex varies with the speed. As we pass from the fastest to the slowest meteors, the maximum is gradually displaced from 225-255 degrees to 285-315 degrees from the direction antiapex-sun to the direction sun-apex. This seemingly gradual transition may, of course, be the apparent result of a compenetration of two groups of meteors. III. The radiants of telescopic meteors. Inasmuch as the distribution of the hourly numbers of meteors coincides almost

Card 5/6

L 17984-63

ACCESSION NR: AT3002083

precisely with the Poisson distribution, it is concluded that the telemeteors are predominantly of sporadic nature. IV. Hourly numbers of telescopic meteors. The hourly numbers of meteors were determined usually by the Opik method. The greatest hourly numbers occur during the summer. This seemingly trivial fact has an extremely nontrivial interpretation: Inasmuch as during the summer the ecliptic occupies its lowest position, the increase in the number of meteors during the summer can be explained, in accordance with several antecedent authors, only by a nonuniform distribution of meteoric matter along the orbit of the Earth. The Earth appears to pass through a region having an increased density of meteoric bodies in the vicinity of the solar longitude of 100 to 150°. It is noted that the number of meteors during the IGY (July 1957 through June 1958) exceeds that observed during the same months of the subsequent year. This would suggest the existence of a secular variation in the number of meteors. Orig. art. has 31 tables, 11 figures, and numerous equations and formulas.

ASSOCIATION: None

SUBMITTED: 00	DATE ACQ: 29Apr63	ENCL: 000
SUB CODE: AS	NO REF SOV: 012	OTHER: 002

Card 6/6

LYUBARSKIY, K.A.; SIMONENKO, A.N.

Incongruity of the existing methods for determining the true number of meteors. Biul. VAGO no.35:8-17 '64. (MIRA 18:4)

1. Ashkhabadskoye otdeleniye Vsesoyuznogo astronomo-geodezicheskogo obshchestva.

BORISOV, A.A.; ZHUKOLAYEV, M. I.; KATTERFEL'D, G.N.; KOZLOV, V.V.; KOZYREV, N.A.; LOZINA-LOZINSKIY, L.K.; LYUBARSKIY, K.A.; SUSLOV, A.K.; FROLOV, P.M.; KHODAK, M.A.

Nikolai Ivanovich Kucherov, 1891-1965; obituary. Izv. Vses. geog. ob-va 97 no.4:388-390 Jl-Ag '65. (MIRA 18:8)

SUSLOV, A.K.; LYUBARSKIY, K.A.

Letters to the editors. Izv. Akad. Nauk Fiz. plan. no.8:45-51 Ag '63. (MIRA 16:8)

1. Leningradskiy planetariy (for Suslov). 2. Ashkhabadskaya astrofizicheskaya laboratoriya Fiziko-tekhnicheskogo instituta AN Turkmenskoy SSR.

ACC NR: AP7005432 SOURCE CODE: UR/0202/66/000/004/0125/0127

AUTHOR: Lyubarskiy, K. A.
ORG: Committee on Meteorites AN TurkmSSR (Komitet po meteoritam AN TurkmSSR)

TITLE: Ages of stony meteorites

SOURCE: AN TurkmSSR. Izvestiya. Seriya fiziko-tekhnicheskikh, khimicheskikh i geologicheskikh nauk, no. 4, 1966, 125-127
TOPIC TAGS: meteorite, earth surface, iron

ABSTRACT:
The radiation ages of meteorites have one peculiarity which is not understood. Whereas the ages of iron meteorites are 200-700 million years, and in rare cases below 100 million years, all radiation ages of stony meteorites are less than 50 million years. The author systematized data on the radiation ages of 249 stony meteorites. Their distribution is given in Fig. 1a; for different types of stony meteorites the forms of the distributions are very different. Since the radiation age dates the time of splitting of the meteorite from a larger mass the difference in distributions means that the process of breakup of the bodies was different for different types. The author reviews the theories presented in the literature for explaining the difference in the radiation ages of iron and stony meteorites and stresses their shortcomings. In this paper the author presents the hypothesis that the small ages of stony meteorites are due to volatiles, H_2O, NH_3, CH_4, and others, which formed part of the asteroids at the time of their condenstaion from the protoplanetary cloud.

Card 1/2 UDC: 523.51

0926 2303

ACC NR: AP7005432

Stony fragments, in contrast to iron fragments, are enriched with volatiles, both in the internal fissures and cavities and on the outside. This influenced their radiation ages in several ways. First, the presence of an additional layer of volatiles on the surface is an effective shield against cosmic radiation, decreasing the accumulation of cosmogenic isotopes, which fictitiously decreases the age. It is shown that stony meteorites in actuality break up more frequently and intensively than iron meteorites, but without participation of collisions. The relative influence of surface erosion on small fragments is greater than on large fragments and therefore small stony meteorites have a smaller chance of retaining their mass for a long time, capable of withstanding atmospheric ablation and being found at the earth's surface.
Orig. art. has: 1 figure. [JPRS: 38,677]

SUB CODE: 03 / SUBM DATE: 31Jan66 / ORIG REF: 003 / OTH REF: 008

Card 2/2

ACC NR: AP7005433 SOURCE CODE: UR/0202/66/000/003/0106/0108

AUTHOR: Lyubarskiy, K. A.

ORG: Committee on Meteorites, AN TurkmSSR (Komitet po meteoritam AN TurkmSSR)

TITLE: Radiation ages of iron meteorites

SOURCE: AN TurkmSSR. Izvestiya. Seriya fiziko-tekhnicheskikh, khimicheskikh i geologicheskikh nauk, no. 3, 1966, 106-108

TOPIC TAGS: meteorite, gallium, germanium, iron, radioactive decay

ABSTRACT: Data were collected on 74 iron meteorites, all for which the ages have been determined on the basis of isotope content. The distribution is shown in Fig. 1a. The distribution is complex with maxima at 100-300, 400-500, 600-700 million years; there is a sloping "tail" in the direction of high ages. The author makes use of a breakdown of meteorites into four groups on the basis of content of gallium and germanium (Geochim. et Cosmochim. Acta, 2, 1, 1951). The content of these elements in iron meteorites does not create a continuous sequence, but is concentrated in four clearly defined regions. The Ga and Ge content is minimum in group IV and maximum in group I. The 74 iron meteorites were assigned to these four groups, as shown in Fig. 1b. Group I was too small to consider. Groups II and IV were similar and were combined; II and IV differed sharply from III. After analysis, it was concluded that all iron meteorites were created by a small number of collisions of parent bodies, accompanied by an insignificant subsequent disintegration. The decay of bodies of groups II and IV occurred approximately

Card 1/2 UDC: 523.51

0926 2305

ACC NR: AP7005433

215 million years ago, and bodies of group III -- approximately 620 million years ago. After certain corrections are introduced, the revised ages are 230 and 860 million years respectively. Orig. art. has: 1 figure and 6 formulas. [JPRS: 38,677]

SUB CODE: 03, 18 / SUBM DATE: 31Jan66 / ORIG REF: 001 / OTH REF: 004

Card 2/2

LYUBARSKIY, K. N.

36698. AVAKOV, A. A., LYUBARSKIY, K. N., i GABASHVILI, T. I. Nekotoryye Svoystva Metallicheskoy Struzhki. Sbornik Trudov Tbilis. In-Ta Inzhenerov Zh. - D, Transporta Im Lenina, XVII - XVIII, 1948 s. 655-64.

SO: Letopis' Zhurnal'nykh Statey, Vol. 50, Moskva, 1949

DUBINSKIY, N.M.; LYUBARSKIY, L.G.

Automatic covering of damaged gas pipelines. Neft. i gaz. prom. no.4:55-57 O-D '64 (MIRA 18:2)

LYUBARSKIY, L.M., inzh.

Automation of long-distance communication in the Northern Caucasus Power System. Trudy VNIIE no.12:132-134 '61. (MIRA 18:4)

1. Sevkavkazenergo.

LYUBARSKIY, L. N.

LYUBARSKIY, L. N. "The rye grain color in connection with the technological indications of its evaluation," In the symposium: Doklady i referaty (Vsesoyuz. nauch.-issled. In-t zerna i produktov ego pererabotki), Moscow, 1947, p. 1-5

SO: U-5240, 17Dec53, (Letopis 'Zhurnal 'nykh Statey, No. 25, 1949).

LYUBARSKIY, L.N., professor.

Relation between the biological and the technological properties of rye kernels. Trudy MTIPP 2:259-282 '52. (MLRA 9:2)
(Rye)

LYUBARSKIY, L.N.

USSR

The nature of the pigmentation of rye grain in connection with the peculiarities of its chemical composition. L. N. Lyubarskii. *Biokhim. Zerna, Akad. Nauk S.S.S.R., Sbornik 2*, 205–25(1954).—The rye grain contains pigments not only in the plastids but also in the cellular juice, although the latter are in low conens. The presence of anthocyanins and chlorophyll in conjunction with carotenoids causes the grain color. Rye grain protein is full-valued in respect to the amino-acid content, although the actual content of protein varies considerably with the location of growth of the grain in the USSR. The greatest amt. of protein matter is in the grains of the green fraction of the grain, less in the yellow and least in brown. This relationship, however, is apt to alter with grain size. The greatest content of cellulose is in the brown grain fractions, being less in green and yellow fractions. Least ash is found in green grains, greatest in brown. The highest amt. of vitamin B_1 is found in the grains of the yellow fraction; vitamin B_1 content is nearly the same in all 3 fractions. G. M. K.

LYUBARSKIY, Lev Nikolayevich, doktor sel'skokhozyaystvennykh nauk, professor; GEL'MAN, D.Ya., redaktor; GOLUBKOVA, L.A., tekhredaktor.

[Rye;(biological and technological characteristics of the grain)]. Rozh'; (biologo-tekhnologicheskie svoistva zerna). Moskva, Izd-vo tekhn. i ekon. lit-ry po voprosam mukomol'no-krupianoi, kombikormovoi promyshl. i elevatorno-skladskogo khoziaistva, 1956. 259 p. (MLRA 10:6)

(Rye)

1 N

ANDERSON, J.A., editor; ALCOCK, A.W., editor; KUZ'MINA, N., professor, doktor biologicheskikh nauk, redaktor; LYUBARSKIY, L., professor, doktor sel'skokhozyaystvennykh nauk, redaktor; NIKOLAYEVA, V.G., redaktor; DUMBRE, N.Ya., tekhnicheskiy redaktor

[The storage of cereal grains and their products. Translated from the English] Khranenie zerna i zernovykh produktor. (Ed. by J.A. Anderson and A.W.Alcock) Perevod s angliiskogo. Pod red. N.Koz'minoi i L.Liubarskogo. Moskva, Izd-vo inostrannoi lit-ry, 1956. 459 p.
(Grain--Storage) (MLRA 10:1)

LYUBARSKIY, L. N.

DZHOROGYAN, G.A., nauchnyy sotrudnik; ZIBEL', B.Ya., inzh. [translator]; MESHCHERINA, O.Ye., bibliograf [translator]; KOZ'MINA, N.P., doktor biol.nauk, otvetstvennyy red.; GRIGOR'YEV, K.P., inzh., red.; KUPRITS, Ya.N., doktor tekhn.nauk, prof., red.; KUPRIYANOV, A.V., inzh., red.; LYUBARSKIY, L.N., doktor sel'skokhozyaystvennykh nauk, prof.red.; LANDA-DALEV, L.M., starshiy nauchnyy sotrudnik; GERZHOY, A.P., kand.tekhn.nauk, starshiy nauchnyy sotrudnik; FEDOSOVA, N.I., red.; GOLUBKOVA, L.A., tekhn.red.

[Drying and heat processing of grain; translations and abstracts] Sushka i termicheskaia obrabotka zerna; perevody i referaty. Moskva, Izd-vo tekhn. i ekon.lit-ry po voprosam mukomol'no-krupianoi, kombikormovoi promyshl. i elevatorno-skladskogo khoz., 1957. 90 p. (MIRA 11:5)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut zerna i produktov ego pererabotki. 2. Vsesoyuznyy nauchno-issledovatel'skiy institut zerna i produktov ego pererabotki (for Dzhorogyan, Gerzhoy, Meshcherina). 3. Mel'kombinat imeni TSyurupy (for Zibel')
(Grain--Drying)

LYUBARSKIY, L.N., prof., doktor sel'skokhoz.nauk;[translator]; NIKOLAYEVA, V.G., red.; REZOUKHOVA, A.G., tekhn.red.

[Standards for grain and cereal products in America; articles translated from the English] Standarty na zerno i zernovye produkty a Amerike; sbornik statei. Moskva, Izd-vo inostr. lit-ry, 1960. 353 p. (MIRA 13:10)
(United States--Grain--Standards)
(United States--Cereal products--Standards)

LYUBARSKIY, L.N.

Determining the make-up of a grain mixture. Standartizatsiia 25 no.8:35-38 Ag '61. (MIRA 14:7)
(Grain--Standards)

LYUBARSKIY, L., doktor sel'skokhoz.nauk; KRAVTSOVA, B., kand.biolog.nauk

Principles of using natural qualitative features of wheat in dividing it into separate batches upon delivery to grain procurement stations. Muk.-elev. prom. 27 no.7:7-8 Jl '61. (MIRA 14:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zerna i produktov yego pererabotki.

(Wheat--Grading)

LYUBARSKIY, Lev N.

"Physical state of grain"

Paper to be presented at CEREAL CHEMISTRY, THE INTERNATIONAL ASSOCIATION FOR - International Cereal Chemistry Congress 1962- Vienna, Austria, 6-9 Jun 62

1. Scientific Research Institute of Grain and Allied Products, Moscow.

KOZ'MINA, Nataliya Petrovna; LYUBARSKIY, Lev Nikolayevich; GRIGOR'YEVA, A.I., red.; GUREVICH, M.M., tekhn. red.

[Grain and its quality evaluation]Zerno i otsenka ego kachestva. Moskva, Sel'khozizdat, 1962. 149 p. (MIRA 16:2)
(Grain--Analysis and chemistry)

PISAREV, Nikolay Semenovich, prof.; LYUBARSKIY, L.N., prof., red.; RUDCHENKO, A.M., red.; YERKHOVA, Ye.A., tekhn. red.

[Laboratory manual for the study of marketing]Lsboratornyi praktikum po tovarovedeniiu. Moskva, No.4.[Grain examination]Issledovanie zerna. Pod red. L.N.Liubarskogo. 1962. 97 p. (MIRA 16:3)

1. Moscow. Institut mezhdunarodnykh otnosheniy.
(Grain--Analysis and chemistry)

LYUBARSKIY, L., doktor sel'skokhoz.nauk; RUSAKOVA, N., kand.tekhn.nauk; AVERKIYEVA, N., inzh.

Methods for determining the technological properties of strong wheat. Muk.-elev. prom. 28 no.12:5-6 D '62. (MIRA 16:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zerna i produktov yego pererabotki.
(Wheat) (Flour)

LYUBARSKIY, L.N.; KRAVTSOVA, B.Ye.

Technological significance of wheat subtypes in standards.
Standartizatsiia 27 no.1:35-39 Ja '63. (MIRA 17:4)

LYUBARSKIY, L.N., prof., doktor sel'skokhoz. nauk

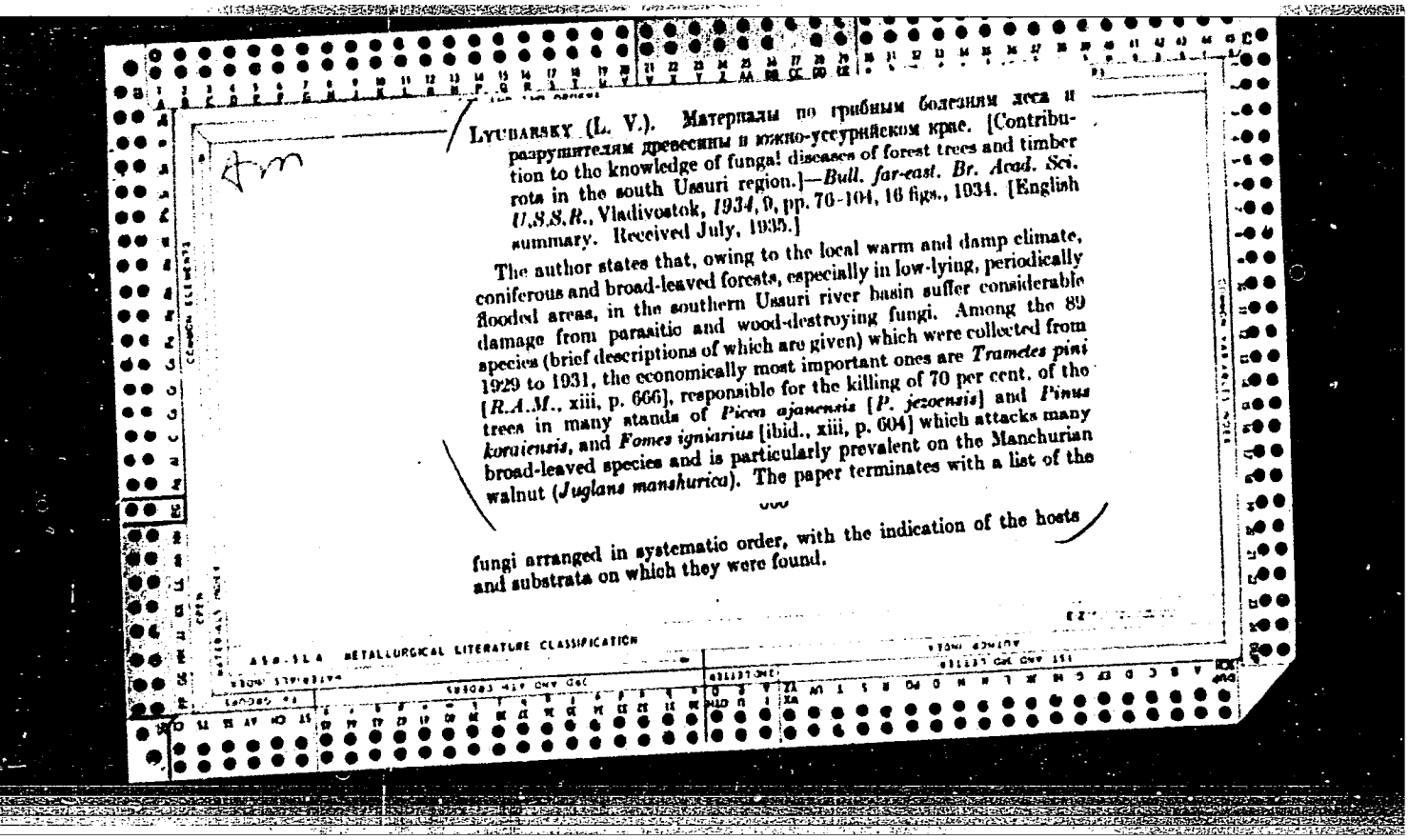
Basic indices are quantity and quality. Standartizatsiia 28 no.10:26 O '64. (MIRA 17:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zerna i produktov yego pererabotki.

BLYAKHEROVA, R.M.; PISARENKO, G.S.; SIDORENKO, M.S.; PRUTSKOVA, M.G.; SAMSONOV, M.M.; KRAVTSOVA, B.Ye.; LYUBARSKIY, L.L.; SUDNOV, P.Ye.; PAYKIN, D.M.; KRYLATOVA, S.A., red.

[Recommendations for the production of strong and durum wheat] Rekomendatsii po proizvodstvu zerna sil'nykh i tverdykh pshenits. Moskva, Izd-vo "Kolos," 1964. 63 p. (MIRA 17:6)

1. Russia (1923- U.S.S.R.) Ministerstvo sel'skogo khozyaystva. Upravleniye nauki, propagandy i vnedreniya peredovogo opyta. 2. Ministerstvo sel'skogo khozyaystva SSSR (for Blyakherova. Pisarenko, Sidorenko). 3. Gosudarstvennaya komissiya p sorto-ispytaniyu sel'skokhozyaystvennykh kul'tur pri Ministerstve sel'skogo khozyaystva SSSR (for Prutskova, Samsonov). 4. Vsesoyuznyy nauchno-issledovatel'skiy institut zerna i produkto. yego pererabotki (for Kravtsova, Lyubarskiy, Sudnov). 5. Vsesoyuznyy institut zashchity rasteniy (for Paykin).



LYUBARSKY (L. V.). Материалы по грибным болезням леса и разрушителям древесины в южно-уссурийском крае. [Contribution to the knowledge of fungal diseases of forest trees and timber rots in the south Ussuri region.]—*Bull. far-east. Br. Acad. Sci. U.S.S.R.*, Vladivostok, *1934*, 9, pp. 76-104, 16 figs., 1934. [English summary. Received July, 1935.]

The author states that, owing to the local warm and damp climate, coniferous and broad-leaved forests, especially in low-lying, periodically flooded areas, in the southern Ussuri river basin suffer considerable damage from parasitic and wood-destroying fungi. Among the 89 species (brief descriptions of which are given) which were collected from 1929 to 1931, the economically most important ones are *Trametes pini* [*R.A.M.*, xiii, p. 666], responsible for the killing of 70 per cent. of the trees in many stands of *Picea ajanensis* [*P. jezoensis*] and *Pinus koraiensis*, and *Fomes igniarius* [ibid., xiii, p. 604] which attacks many broad-leaved species and is particularly prevalent on the Manchurian walnut (*Juglans manshurica*). The paper terminates with a list of the fungi arranged in systematic order, with the indication of the hosts and substrata on which they were found.

LYUBARSKIY, L. V.

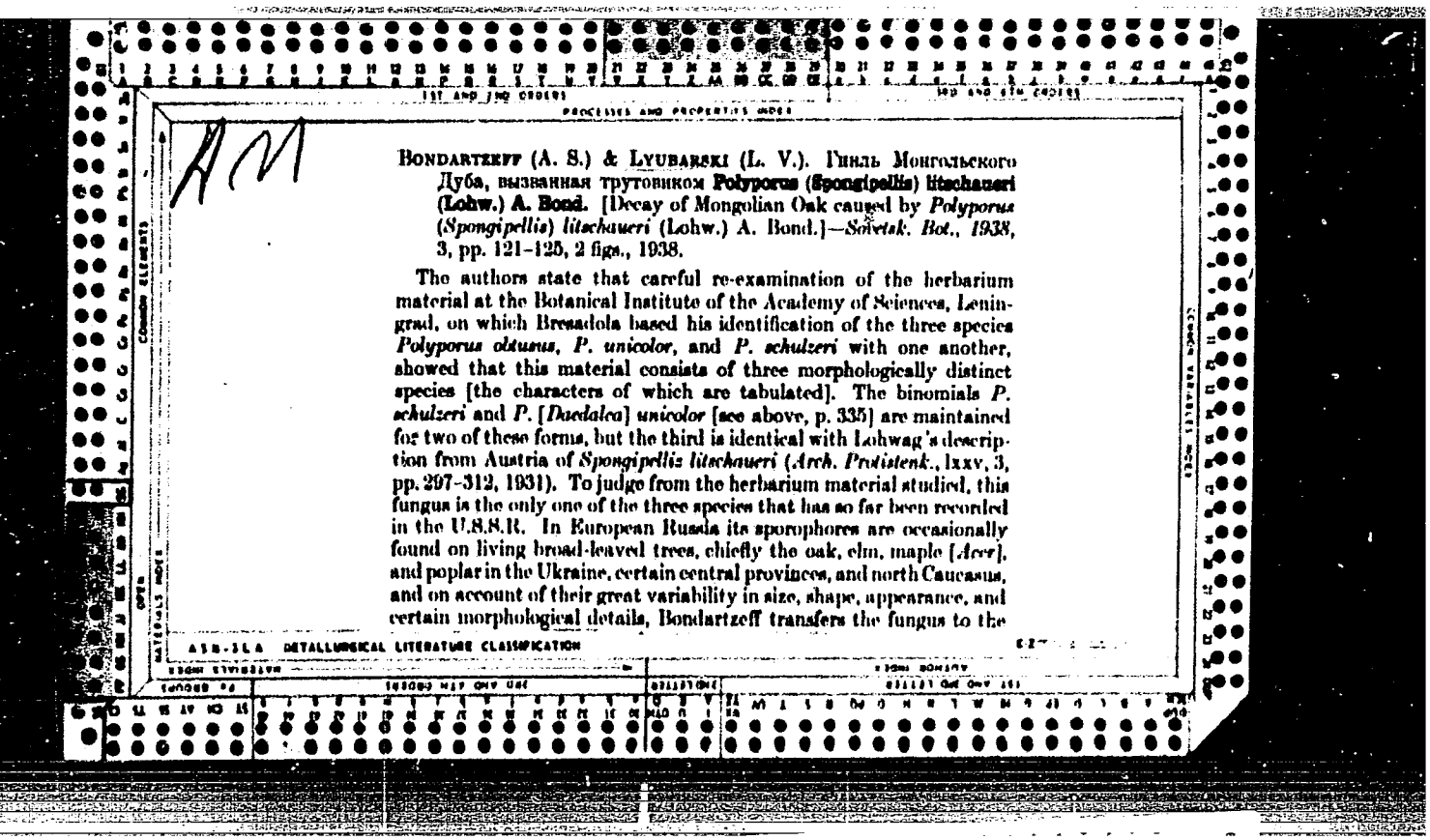
LYUBARSKIY, L. V. "Fungus Diseases of Forests in the Zeya and Rukhlovo Raions of the Far Eastern Krai," Vestnik Dal'nevostochnogo Filiala Akademii Nauk SSR, no. 17, 1936, pp. 79-85. 511 V843

SOURCE: SIRA SIGO-53, 15 Dec. 1953

LYUBARSKIY, L. V.

LYUBARSKIY, L. V. "The Pine Fungus (Trametes pini Fr.) in the Far East," Vestnik Dal'nevostochnogo Filiala Akademii Nauk SSSR, no. 21, 1936, pp. 113-123. 511 V843

SOURCE: DIRA SIGO-53, 15 Dec. 1953



BONDARTZEFF (A. S.) & LYUBARSKI (L. V.). Гниль Монгольского Дуба, вызванная трутовиком **Polyporus (Spongipellis) litschaueri (Lohw.) A. Bond.** [Decay of Mongolian Oak caused by *Polyporus (Spongipellis) litschaueri* (Lohw.) A. Bond.]—*Soviets. Bot.*, *1938*, 3, pp. 121–125, 2 figs., 1938.

The authors state that careful re-examination of the herbarium material at the Botanical Institute of the Academy of Sciences, Leningrad, on which Bresadola based his identification of the three species *Polyporus obtusus*, *P. unicolor*, and *P. schulzeri* with one another, showed that this material consists of three morphologically distinct species [the characters of which are tabulated]. The binomials *P. schulzeri* and *P.* [*Daedalea*] *unicolor* [see above, p. 335] are maintained for two of these forms, but the third is identical with Lohwag's description from Austria of *Spongipellis litschaueri* (*Arch. Protistenk.*, lxxv, 3, pp. 297–312, 1931). To judge from the herbarium material studied, this fungus is the only one of the three species that has so far been recorded in the U.S.S.R. In European Russia its sporophores are occasionally found on living broad-leaved trees, chiefly the oak, elm, maple [*Acer*], and poplar in the Ukraine, certain central provinces, and north Caucasus, and on account of their great variability in size, shape, appearance, and certain morphological details, Bondartzeff transfers the fungus to the

genus *Polyporus* as *P. linhartianus* n. comb. [with a revised Russian diagnosis: cf. *R.A.M.*, xv, p. 63]. In the Russian Far East it is common on the Japanese elm (*Ulmus propinqua*) and causes very considerable damage to the Mongolian oak (*Quercus mongolica*), affecting from 61·3 to 89·9 per cent. of the trees in certain districts. On this host it produces a white heart rot, frequently extending throughout the trunk and rendering the timber useless for industrial purposes.

LYUBARSKIY, L. V.

LYUBARSKIY, L. V. "Wood-destroying Fungi of the Schmidt Birch (Betula Schmidtii Rgl.)," Vestnik Dal'nevostochnogo Fil ala Akademii Nauk SSSR, no. 29, (2) , 1938, pp. 113-118. 51 V8A3

SOURCE: SIRA SIGO-53, 15 Dec. 1953

LYUBARSKIY, L. V.

LYUBARSKIY, L. V. "On fungi which attack trees (hymenomycetineae) of Sakhalin Island", Sbornik rabot (Dal'nevost. nauch.-issled. in-t les. khoz-va i lesoeksploatatsii), Issue 1, 1948, p. 143-50, - Bibliog: 5 items.

SO: U-4393, 19 August 53, (Letopis 'Zhurnal 'nykh Statey', No. 22, 1949).

LYU ARSKIY, L. V.

LYU ARSKIY, L. V. "On the study of the pests of the Schmidt birch -- Betula Schmidtii Reg.", Sbornik rabot (Dal'nevost. nauch.-issled. in-t lesn. khoz-va i lesokhimicheskoy), Issue 1, 1948, p. 170-71.

SO: U-4393, 19 August 53, (Letopis 'Zhurnal 'nykh Statey', No. 22, 1949).

1. LYUBARSKIY, L.V.

2. USSR (600)

7. "Reddening of the Wood of Far Eastern Firs", Osobennosti Razvitiya Lesnogo Khozyaystva Dal'nego Vostoka, No 3, 1951, pp 79-89.

9. Mikrobiologiya, Vol XXI, Issue 1, Moscow, Jan-Feb 1952, pp 121-132. Unclassified.

LYUBARSKIY, L.V.

Trees

Role of excrescence on branches of the common pine in forestry. Les. khoz. 5. no. 2 (41) 1952

Monthly List of Russian Accessions, Library of Congress, July, 1952 UNCL.

LYUBARSKIY, L.V.

Biology and ecology of the longicorn beetle Callipogon (Eoxenus) relictus sem. (Coleoptera, Cerambycidae). Ent.oboz. 33:95-102 '53. (MLRA 7:5)

(Longicorn beetles)

USSR/ General and Specialized Zoology. Insects P
Forest Pests.

Abs Jour : Ref Zhur - Biol., No 17, 1958, No 78332

Author : Lyubarskiy, L. V.
Inst : Far Eastern Branch AS USSR
Title : The Study of Tree and Bush Damaging Aphids in the Far East.

Orig Pub : Tr. Dal'nevost. fil. AN SSSR, sor. zool., 1956 3(6), 65-82.

Abstract : On the basis of mass collecting in 1934-35, in the Makhinski Experimental Forest (in the southern part of Primorskiy Kray) and in the dendrarium of Dal'NIILKH /Far Eastern Scientific Research Forestry Institute/ in Khabarovsk, data is given on 74 species on aphids (their biology, food plants, the character of their damage, dis-

Card 1/2

TOLMACHEV, A.I.; LYUBARSKIY, L.V.; LASHKOV, A.I.

Publication of materials of a conference on problems of developing forestry and the forest industry in the Far East. Bot.zhur.41 no.1: 158-160 Ja '56. (MLRA 9:6)

1.Sakhalinskiy filial Akademii nauk SSSR.
(Soviet Far East--Forests and forestry)

LYUBARSKIY, L.V.

Some rare polyporaceous fungi discovered in the Far East. Bot. mat. Otd. spor. rast. 15:111-125 Ja '62. (MIRA 15:10)
(Soviet Far East—Polyporaceae)

BONDARTSEV, A.S.; LYUBARSKIY, L.V.

New genus and new species of Polyporaceae found in the Far East.
Bot. mat. Otd. spor. rast. 16:125-133 '63. (MIRA 16:10)